

Algae Program – Integration Session

Day 2 Introduction

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April 4, 2023



Feedstock



Algae



Conversion



Systems



Data



Renewable Carbon Resources (RCR) – Algae Team



Nichole Fitzgerald
Program Manager



Dan Fishman
Technology Manager



Christy Sterner
Technology Manager



Liz Burrows
Technology Manager



Annie Otwell
AAAS Fellow



Jamie Meadows
Project Monitor



Phil Lee
Project Monitor



Frank Fields
Project Monitor



Ty Robinson
Business Support

Reviewer Introductions: Integration

- Lead reviewer: Dr. Lora Cameron-Landis, Associate Director of Upstream Process Development and Manufacturing at Eli Lilly
- Valerie Harmon, President and CEO at Harmon Consulting, Inc
- Dr. Mark Jones, Dow (retired)
- Dr. Paul Roessler, Algenol (retired)



THANK YOU, REVIEWERS!

Agenda overview for BETO

Panel A = Cultivation and Strains, Panel B = Integration

		Room 1	Room 2	Room 3	Room 4	Room 5	Room 6	Room 7	Room 8
Monday		Plenaries							
	Morning								
	Afternoon	Algae A	Algae B	FT	DMA	ABF	SDI A	SDI B	PABP
Tuesday		Plenaries							
	Morning								
	Afternoon	Algae A	Algae B	FT	DMA	ABF	SDI A	SDI B	PABP
Wednesday		Plenaries							
	Morning								
	Afternoon			FT	DMA	ABF	SDI A	SDI B	PABP
Thursday	Plenary	Plenaries							
	Morning	OW	FCIC			CO2	BC/Lignin	CatUp	PABP
	Afternoon	OW	FCIC			CO2	BC/Lignin	CatUp	PABP
Friday		Plenaries							
	Morning								
	Afternoon						BC/Lignin	CatUp	

Algae Session: 32 projects

Algae session themes at a glance

Monday 4/3/23

Plenary

Tuesday 4/4/23

Cultivation and Strains

Integration

Lunch!

Cultivation and Strains

Integration

Cultivation and Strains

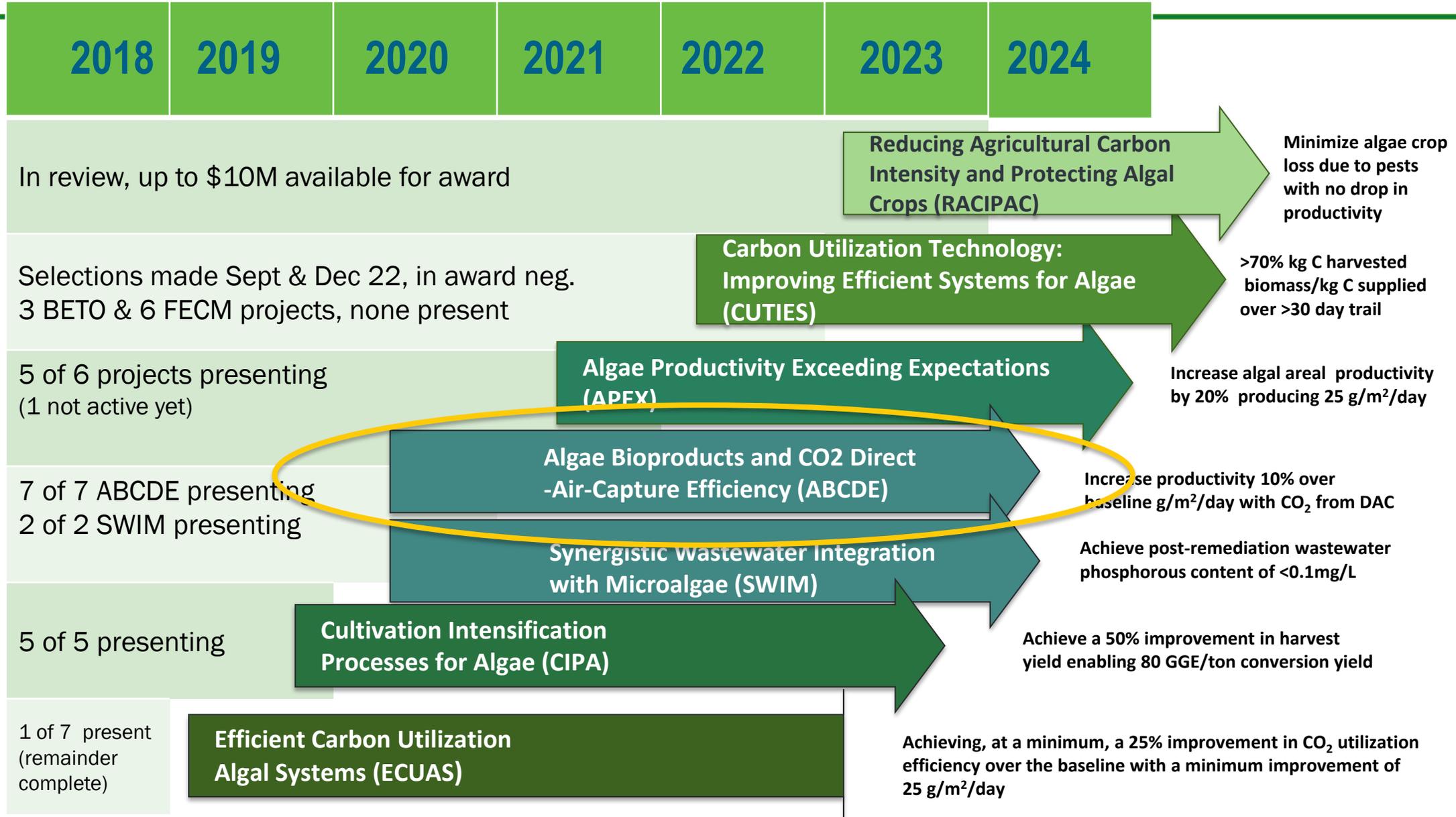
Integration

Day 2 Integration Projects

ADVANCED ALGAL SYSTEMS INTEGRATION				
DAY 2 – TUESDAY APRIL 4, 2023				
Start Time (MT)	End Time (MT)	Title	Organization	Speaker
8:30 AM	8:40 AM	Technology Area Daily Intro	BETO	
8:40 AM	9:10 AM	Innovations in Algae Cultivations EE0008903	Global Algae Innovations	Dave Hazlebeck
9:10 AM	9:40 AM	Production of algae biofuel with CO2 direct air capture EE0009272	Global Algae Innovations	Dave Hazlebeck
9:40 AM	10:10 AM	ASU's DAC polymer-enhanced cyanobacterial bioproductivity (AUDACity) EE0009274	Arizona State University	Willem Vermaas
10:10 AM	10:30 AM	Break	All	
10:30 AM	11:00 AM	Microalgae Commodities Production with a Direct Air Capture Process EE0009276	MicroBio Engineering, Inc.	Braden Crowe
11:00 AM	11:30 AM	ACCESS CARBON - Alkaline Carbon Capture and Expression-Streamlined Spirulina Cultivated in Air for Reliable Bioproducts, Oil, and Nutrition EE0009277	Lumen Bioscience, Incorporated	Mark Heinnickel
11:30 AM	12:00 PM	Biomolecular Films for Direct Air Capture of CO2 EE0009275	University of California, San Diego	Michael Guarnieri
12:00 PM	1:00 PM	Lunch	All	

1:00 PM	1:30 PM	High pH/High Alkalinity Cultivation for Direct Atmospheric Air Capture and Algae Bioproducts EE0009273	Montana State University	Robin Gerlach
1:30 PM	2:00 PM	Development of high value bioproducts and enhancement of direct-air capture efficiency with a marine algae biofuel production system EE0009278	Duke University	Zackary Johnson
2:00 PM	2:30 PM	Combined Algal Processing for the Synthesis of Liquid Oleofuels and Products (CAPSLOC)	NREL	Tao Dong
2:30 PM	3:00 PM	HTL Development	PNNL	Peter Valdez
3:00 PM	3:20 PM	Break		
3:20 PM	3:50 PM	Algal biofuels techno-economic analysis	NREL	Ryan Davis
3:50 PM	4:20 PM	HTL Model Development	PNNL	Peter Valdez
4:20 PM	4:30 PM	Adjourn	All	
4:30 PM	5:00 PM	Closed Door Comment Review Session	Reviewers	

Funding Opportunity Announcements



Algae Bioproducts and CO₂ Direct-Air Capture Efficiency (ABCDE)

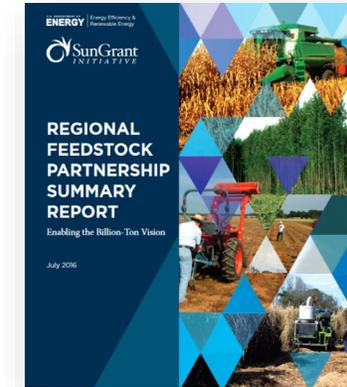
FY2020: DE-FOA-0002203

Objective - Improve algal feedstock quality for algae grown using CO₂ captured from the air (i.e., DAC). Successful projects will capture CO₂ from the air, grow high quality algal biomass suitable for conversion to fuels and products, and develop fuels and/or products made from the algae biomass.



Federal \$\$ Per Award	Total Federal Funding	Award Duration	Cost Share (%)
\$1M - \$2M	\$14M	3 years	20%

Advancing the Regional Feedstock Partnership



Save the date!
June 6-7, 2023
Kansas City, MO

Purpose-grown energy crops will play an important role in meeting the 2050 SAF volumetric goals

Workshop to develop the vision for a next iteration of the RFP
Share ideas, find collaborators, shape the vision of this important initiative!

Thank you!

